

REMARKS

This is in full and timely response to the final Office Action mailed September 29, 2003.

Applicants note that the Office Action makes multiple references to the rejection of claims 1-4. This appears to be a typographical error, as only claims 1-3 are pending in this application, with claims 1 and 3 being independent. Applicants believe that all pending claims are in condition for allowance. Reexamination and reconsideration in light of the above amendments and the following remarks is respectfully requested.

Rejections under 35 U.S.C. §102

Claims 1-3 are rejected under 35 U.S.C. 102(b) as anticipated by U.S. Patent No. 5,721,018 to Göldner et al. Applicants respectfully traverse this rejection.

Claim 1 recites a coating composition for undercoat comprising: (A) an acrylic resin having a hydroxyl value of 30 to 85, a glass transition temperature (T_g) within the range of 40 to 90°C and a weight average molecular weight of 1000 to 30000, (B) a pigment, (C) resin fine particles, (D) a polyisocyanate compound, and (E) a curing catalyst; wherein: a ratio of isocyanate group in the (D) component to 1 equivalent of hydroxyl group in the (A) component is 2.0 to 4.0 equivalents; content of the (B) component is from 100 to 500 parts by weight relative to 100 parts by weight of resin solid matter; and the (C) component is mixed so as to be from 0.1 to 5% by weight as a solid matter relative to the weight of the (B) component.

Claim 3 recites a coating method for repair comprising steps of: conducting surface treatment at a part to be repaired; providing undercoat; and providing topcoat; wherein a coating composition for the undercoat comprises: (A) an acrylic resin having a hydroxyl value of 30 to 85, a glass transition temperature (T_g) within the range of 40 to 90°C and a weight average molecular weight of 1000 to 30000, (B) a pigment, (C) resin fine particles, (D) a polyisocyanate compound, and (E) a curing catalyst; wherein: a ratio of isocyanate group in the (D) component to 1 equivalent of hydroxyl group in the (A) component is 2.0 to 4.0 equivalents; content of the (B) component is from 100 to 500 parts by weight relative to 100 parts by weight of the resin

solid matter; and the (C) component is mixed so as to be from 0.1 to 5% by weight as a solid matter relative to the weight of the (B) component.

Göldner et al. '018 discloses a method of manufacturing a multilayer coating on an electrically non-conductive substrate surface. The coating is characterized by the application of an "aqueous base lacquer made from an aqueous dispersion containing covering transparent and/or decorative pigments and/or fillers optionally together with conventional lacquer additives and up to 15 wt. % of organic solvent relative to the applicable base lacquer." See column 1, line 63 to column 2, line 4. The dispersion contains

A) 70 to 100 wt. % of a partly or completely acid-neutralised cationic poly(meth)acrylate, polyester, polyurethane and/or polyurethane-urea resin, having a number-average molecular weight (Mn) of 500 to 500000, an OH number of 0 to 450, an amine number of 20 to 200 and a glass transition temperature of -50.degree. to +150.degree. C., and

B) 0 to 30wt. % of an amine-formaldehyde condensation resin and/or a blocked polyisocyanate, in each case with at least two groups per molecule reactive with regard to the amino and/or OH groups and/or urethane and/or urea groups in component A, the percentage weights of components A) and B) each being relative to solid resin and adding up to 100 wt. %, and the ratio of pigment and fillers to the sum of components A) and B) being 0.05-1.2 to 1 relative to the solids weight, and the total solids content of the base lacquer being 15 to 50 wt. %.

Next, in the method according to the invention, a clear lacquer based on solvent-containing or water-containing non-pigmented resins or a clear-lacquer powder is applied, the base lacquer and the clear lacquer being cured either separately or together, optionally after short intermediate drying, at temperatures below 160.degree. C.

The component A) used in the base lacquer according to the invention is a poly(meth)acrylate, polyester, polyurethane and/or polyurethane-urea resin containing basic groups which when at least partly neutralised form ionic salts, e.g. cation-forming groups.

The poly(meth) acrylate resin containing basic groups in component A) is manufactured by solution polymerisation or emulsion polymerisation or copolymerisation and has a hydroxyl number of 0 to 450, preferably 30 to 200 mg KOH per g solid resin. The number-average molecular weight (Mn) is 500 to 50000, preferably 1000 to 10000 (measured by gel permeation chromatography calibrated with polystyrene fractions). its viscosity is preferably 0.1 to 10 Pa.s, more particularly 0.5 to 5 Pa.s in 50% solution in monoglycol ethers (more particularly butoxyethanol) at 25.degree. C. Its glass transition temperature (calculated from the glass transition temperatures of the homopolymers) is between -50.degree. and +150.degree. C., preferably between -20.degree. and +75.degree. C. Suitable average molecular weights or viscosities can also be obtained by mixing resins of higher or lower molecular weight or viscosity. The

amine number is between 20 and 200, preferably 30 to 150 and particularly preferably 45 to 100 (mg KOH per g solid resin).

The poly(meth)acrylate resins (component A) containing basic groups can be manufactured as in the prior art, as described e.g. in published German patent applications No. 15 46 854, (U.S. Pat. No. 3,458,420) 23 25 177 U.S. Pat. No. 3,988,281 or 23 57 152 (U.S. Pat. No. 4,164,488). Practically all radically (by radicals initiated) polymerisable monomers are suitable as ethylenically unsaturated monomers, subject to the normal limitations for copolymerisation given by the Q and e-scheme after Alfrey and Price or by the copolymerisation parameters (compare Brandrup and Immergut, Polymer Handbuch, 2nd edition, John Wiley and Sons, New York 1975). The basic poly(meth)acrylate resin can contain amino groups and also onium groups such as quaternary ammonium groups or sulphonium or phosphonium groups. Particular preference is given to amino groups which make the resin dilutable with water after neutralisation with organic acids. A copolymer of this kind, containing amino groups and hydroxyl groups, is obtained by polymerisation in solution or in emulsion. Solution polymerisation is preferred.

The poly(meth)acrylate resin in component A) is obtained from (meth) acrylate monomers, optionally together with other radically polymerisable monomers. Radically polymerisable monomers, i.e. (meth)acrylate monomers and/or other radically polymerisable monomers, are radically polymerisable amino-group containing monomers or radically polymerisable monomers containing amino and hydroxyl groups. They can be used mixed with other radically polymerisable monomers.

See column 2, line 6 to column 3, line 27.

Accordingly, Göldner et al. '018 discloses a multilayer coating method using a dispersing element containing (A) cationic poly(meth)acrylate containing Mn, OHV, and Tg, (B) containing block polyisocyanate etc. and so on. The water soluble lacquer disclosed in US5,721,018, is used for metallic finish or over coating of mono color.

In contrast, the present claimed invention relates to organic solvent dilution type coating composition for undercoat, and corresponds to "primer" in Göldner et al. '018. It is not acrylic resin or cationic acrylic resin using a monomer having amino group used in the present invention.

The Examiner notes that in Göldner et al. '018 it is disclosed that "the ratio of isocyanate to hydroxyl group in the acrylic resin is at least 2." However, the Examiner's determination is incorrect. What is disclosed in Göldner et al. '018 is that at least two (2) functional groups of (B) component which reacts to functional group of (A) component are in one molecule. Equivalent ratio of functional group in the component (B) to functional group in the component (A) is not

disclosed in the reference. Still further, the examiner does not offer any explanation as to how the examiner reached this conclusion.

In column 18, lines 20-22 of Göldner et al. '018, there is disclosure about microgel-like thickeners incorporated in the lacquer. However, unlike the present invention, they do not disclose the specific compounding amount.

According to the present invention, by combining specific amount of the component (C), deposition of high concentration pigment component is prevented.

A document can only anticipate a claim if the document discloses, explicitly or implicitly, each and every feature recited in the claim. Verdegall Bros. v. Union Oil Co. of Calif., 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Since Göldner et al. '018 fail to disclose, either explicitly or implicitly, teach or suggest at least the above-noted elements recited in independent claims 1 and 3, Göldner et al. '018 cannot anticipate the claims. At least in view of the foregoing, claims 1 and 3 are allowable, and the rejection should be reconsidered and withdrawn.

Additionally, claim 2, being dependent upon allowable claim 1, is also allowable for the reasons above. Moreover, this claim is further distinguished by the additional features recited therein, particularly within the claim combination.


Accordingly, withdrawal of the §102 rejection is respectfully requested.

Conclusion

For the foregoing reasons, claims 1-3 are allowable, and the present application is in condition for allowance. Accordingly, favorable reexamination and reconsideration of the application in light of these amendments and remarks is courteously solicited. If the examiner has any comments or suggestions that would place this application in even better form, the Examiner is requested to telephone the undersigned attorney at the number below.

Dated: November 26, 2003

Respectfully submitted,

By 
Robert S. Green
Registration No.: 41,800
RADER, FISHMAN & GRAUER PLLC
The Lion Building
1233 20th Street, N.W., Suite 501
Washington, DC 20036
(202) 955-3750
Attorney for Applicant

Should additional fees be necessary in connection with the filing of this paper, or if a petition for extension of time is required for timely acceptance of same, the Commissioner is hereby authorized to charge Deposit Account No. 180013 for any such fees; and applicant(s) hereby petition for any needed extension of time.

DC140914